

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|   |   |  |
|---|---|--|
| Applicant's or agent's file reference<br>58915WO006 | <b>FOR FURTHER ACTION</b> <div style="float: right; font-size: small;">see Form PCT/ISA/220<br/>as well as, where applicable, item 5 below.</div> |  |
| International application No.<br>PCT/US04/32616     | International filing date ( <i>day/month/year</i> )<br>01 October 2004 (01.10.2004)   | (Earliest) Priority Date ( <i>day/month/year</i> )<br>03 October 2003 (03.10.2003) |
| Applicant<br>3M INOVATIVE PROPERTIES COMPANY        |   |  |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 9 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the Report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☒ Certain claims were found unsearchable (See Box No. II)

3. ☒ Unity of invention is lacking (See Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/32616

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claims Nos.: 5-10,14,21,25,34,38,41,64,65 and 76-90  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/32616

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 31/4745, 31/496, 31/506, 31/5377, 31/541, 31/551; C07D 471/04, 401/14, 405/14; A61P 37/02  
US CL : 514/293, 232.8, 253.03, 218, 214.03, 217.07, 273, 228.5; 546/82; 544/126, 60, 361; 540/575, 585, 597

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/293, 232.8, 253.03, 218, 214.03, 217.07, 273, 228.5; 546/82; 544/126, 60, 361; 540/575, 585, 597

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
CAS ONLINE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No.  |
|------------|---|--|
| X,P        | US 2004/0176367 A1 (GRIENGRABER et al) 09 September 2004 (09.09.2004), see entire document, especially page 53, Example 22; pages 54-56. compound I-Id. | 1-4, 11-13, 15-20, 22-24, 26-33, 35-37, 39, 40, 42-63, 66-75 |
| A          | US 6,200,592 B1 (TOMAI et al) 13 March 2001 (13.03.2001), columns 3-6, Formulae I-V.  | 1-4, 11-13, 15-20, 22-24, 26-33, 35-37, 39, 40, 42-63, 66-75 |
| A          | US 4,753,951 A (TAKADA et al) 28 June 1988 (28.06.1988), columns 13-70.   | 91-93  |
| A          | US 4,698,348 A (GERSTER) 06 October 1987 (06.10.1987), column 5, line 57.   | 91-93  |

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

|  |   |       |  |
|--|---|-------|--|
| * Special categories of cited documents: |   | * "T" | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
| "A"                                      | document defining the general state of the art which is not considered to be of particular relevance  | "X"   | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone   |
| "E"                                      | earlier application or patent published on or after the international filing date   | "Y"   | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L"                                      | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Z"   | document member of the same patent family  |
| "O"                                      | document referring to an oral disclosure, use, exhibition or other means  |       |  |
| "P"                                      | document published prior to the international filing date but later than the priority date claimed  |       |  |

Date of the actual completion of the international search

08 March 2005 (08.03.2005)

Date of mailing of the international search report

18 APR 2005

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US04/32616

### BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-4, 11-13, 15-20, 22-24, 26-33, 35-37, 39, 40, 42-63 and 66-75, drawn to a 4-aminoimidazoquinoline compound, its composition and method of use.

Group II, claim(s) 91-93, drawn to an imidazoquinoline compound of formula IX.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I is drawn to an immunomodulating 4-aminoimidazoquinoline compound. Group II is drawn to an imidazoquinoline compound of Formula IX, which has psychostimulant activity.